



Harm Reduction: “Science” or Something Else...

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What is Harm Reduction?

Definitions vary slightly but most include the following components:

- Associated with substance abuse
- Involves interventions and policies that don't necessarily focus on abstinence, but on reducing drug-related harm (e.g. needle exchange programs)
- Interventions may be targeted at the individual, family, community or society level



The concept came out of AIDS research and has been divisive for many years...

Tobacco Harm Reduction History

- The “habit” of smoking was the focus of research from the early 1960’s until late 1980’s
- Focus was on psychological and social factors associated with smoking behavior
- Nicotine and tar were considered the major **toxins** in tobacco

US Surgeon General on Smoking and Health, 1964:

“...the habitual use of tobacco is related primarily to psychological and social drives, reinforced and perpetuated by the pharmacological actions of nicotine.”

Role of Nicotine, circa 1950-1980

- Nicotine was recognized as being addictive, but this was considered a minor component of tobacco use
- In late 1950's a scientist, unknown at the time to be associated with the tobacco industry, contributed to the WHO definition of addiction which rejected nicotine because it's use did not produce an observable physical withdrawal

Harm Reduction, 1960's

- Focused on lowering the tar and nicotine content of cigarettes, which persisted for many years
- Many methodological problems existed: no standards related to harmful or safe levels, testing done with cigarette machines



Tobacco Industry and Tar/Nicotine Reduction

- Suppressed their data on the addictive nature of nicotine
- Maintained covert ties to some members of expert panels
- Altered the components of cigarettes (e.g. added ammonia) to enhance nicotine absorption while levels in products were lowered

The Tobacco Industry and Cancer Research

- In 1970's industry representatives participated in NCI advisory group on smoking and health
- Failed to disclose findings from industry research
- Pushed successfully to remove funding for the development of pharmacologic agents to aid in smoking cessation

The Tobacco Industry wants us to believe tobacco use is a personal choice

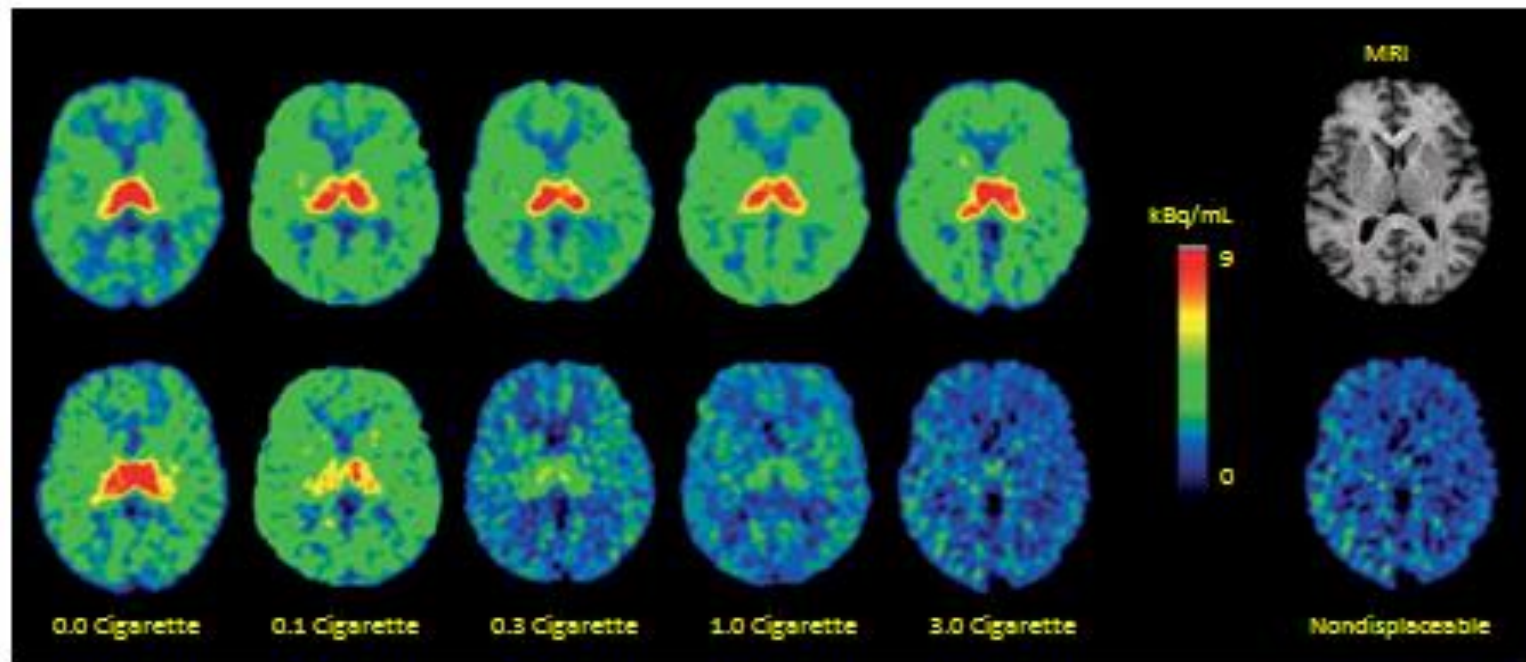


What We Know About Nicotine, circa 1990-present

- **Nicotine is a highly addictive substance**
- Reward, Attention, Cognitive Control, Anxiety, Arousal are all affected by the action of nicotine on the brain
- Genetic studies are starting to target specific susceptibilities, focus is on Gene-Environment interactions particularly as related to age of initial exposure, including in-utero exposure

Nicotine in the Brain

Smoking Saturates Nicotinic Receptors



Brody, A.L. Arch Gen Psychiatry. 63;907-915, 2006

Smoking Does Cause the Greatest Harm



But Does Less Harm = Harmless?

- Light, Ultra Light terminology is bogus and now banned by the FDA
 - Historically and even today harm reduction “science” is funded by the Tobacco Industry
- “The endowed chair and research funds were created by the James Graham Brown Cancer Center using more than \$3 million in unrestricted gifts by U.S. Smokeless Tobacco Company and Swedish Match North America, Inc. to the University of Louisville.” U of L “Bucks for Brains” website (current)

Smokeless Tobacco Can Kill

- ST use has been associated with an increased risk of fatal MI and Stroke (Piano, et al, 2010; Yatsuya & Folsom, 2010)
- US Smokeless contains high concentrations of carcinogens: TSNA *and* HIGH CONCENTRATIONS OF NICOTINE
- US Snus is **NOT** equivalent to Swedish Snus; most harm reduction studies have used Swedish Snus as model
- ST use is associated with oral disease, pancreatic cancer and reproductive problems (Benowitz, 2011)
- Tobacco industry is aggressively marketing smokeless products as “less harmful” and more discreet than smoking
- “Dual use” is increasingly common

Issues Related to Cessation

- “Half truths” remain pervasive related to reduced harm, role of nicotine
- Clinical research on nicotine addiction is years behind tobacco industry research
- There are many established and novel ST products and most deliver high and steady concentrations of nicotine
- It’s important to follow the money: Lorillard just purchased Blu Ecigs

Current Research Projects



Very Low Nicotine Cigarettes: The “X-22”

- 97% reduction in nicotine content
- Studies stalled when the tobacco industry stopped making these
- Research set to resume with new manufacturer
- Thought is that without the nicotine, the cigarettes won't have appeal
- Goal is to help people quit: “prescription cig” and slow youth progression to addiction

Switch to Quit

- Based on Swedish Model, where there is a high rate of snus use, and low rate of smoking
- Funded by \$3 million in unrestricted gifts by U.S. Smokeless Tobacco Company and Swedish Match North America, Inc. to the University of Louisville
- Using Owensboro as a “lab” (Human Subjects Protection???)
- Potential to provide valuable marketing information to the tobacco industry

Recommended Reading

Parascandola, M. (2011). Tobacco Harm Reduction and the Evolution of Nicotine Dependence. *American J Public Health* 101(4), 632-641.

Benowitz, N.L. (2011). Smokeless Tobacco as a Nicotine Delivery Device: Harm or Harm Reduction? *Clinical Pharmacology & Therapeutics* 90(4), 491-493.

Questions?

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